Barriers to maintaining child care coverage: an analysis of states' child care subsidy policies

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Abstract

Child care subsidies play an important role in stabilizing parental employment and helping low-income families access quality and affordable child care options. However, low-income families on average only maintain subsidies for short periods of time, commonly known as spells. While there are several reasons a family may stop using subsidies, some policymakers and researchers have expressed concerns that program policies may create barriers to subsidy maintenance. With limited federal requirements under the Child Care and Development Block Grant, states have developed divergent policies for their state-based child care subsidy programs. To date, research on child care subsidies has mainly focused on the demographics differences between subsidy recipients and low-income families who do not use subsidies. Very little is known about the effects of states' policies on whether families' maintain subsidy coverage.

Using data from the Urban Institute's CCDF Policies Database and the Administration for Children and Families' CCDF Administrative Dataset this paper analyzes the effects of polices on average spell length and stability of child care spells from October 1, 2007 to September 30, 2010. In particular, the study focuses on policies related to whether families can count job search as an eligibility activity, the length of time between when a family must redetermine its eligibility, and requirements around reporting changes in income. To calculate the effect of policies on subsidy receipt, a difference-in-difference model was run using fixed state and time effects.

All three policies had significant effects on average length and stability of spells, although to varying degrees. Policies that did not require families to report all changes in income were associated with longer and more stable child care spells. An initial analysis of job search eligibility found that states that did not allow job search were associated with increases in spell length and stability of spells. However, further analyses that focused on both TANF recipients and the share of eligible children with stable spells found that more restrictive policies around job search were in fact associated with a decrease in average spell length and stability. This could mean that states with more restrictive policies may be serving more stable populations and a measure only looking at observed spells will not capture the effect on less stable families likely effected by the policies. Finally, redetermination policies had mixed effects on average length and stability of spells, with longer redetermination periods resulting in increases in both stable and unstable spells. Shorter eligibility periods may create barriers for some families, while allowing others to take care of unresolved issues that may prevent them from maintaining subsidies.

In developing policies, states face the dual challenge of meeting the needs of low-income families while ensuring subsidies are provided at appropriate levels. Studies such as this may offer states the opportunity to identify policies that create most significant barriers to subsidy maintenance and consider how changes to policies may better meet the needs of low-income families.

Introduction

Child care subsidies play an important role in improving low-income families' access to affordable and quality child care. Child care expenditures are estimated to account for as much as 30 percent of a low-income family's total income (Laughlin, 2013, p. 15). A lack of affordable child care can be a significant barrier for low-income families as they try to negotiate work and find quality supervision for their children. Limited options can create instability in parental employment and may also lead parents to place children in low-quality child care arrangements or to leave children unattended, which may have negative effects on child development.

Because of the importance of quality child care in stabilizing parental employment and in improving developmental outcomes of children, the federal and state governments subsidize child care through a number of systems, including the tax code and direct programs, such as Head Start and public pre-kindergarten. The largest subsidy for low-income families comes in the form of child care vouchers[1] through the Child Care and Development Fund (CCDF).

However, only a small proportion of eligible families utilize subsidies, and those who do often use them for only short periods of time, commonly known as "spells." Researchers estimate that only 15 to 30 percent of eligible families receive subsidies (Assistant Secretary for Planning and Evaluation, 2010, 2012; Herbst & Tekin, 2013). Additionally, studies have found that the average spell typically lasts from three to seven months (Adams & Rohacek, 2010; Meyers et al., 2002).

[1] Some states also administer subsidies through contracts with providers. In FFY 2011, approximately 8 percent of subsidies nationwide were paid through contracts (Office of Child Care, 2011).

Disruptions in child care subsidy receipt can lead to instability in child care and create financial challenges for families as they shift resources to cover child care costs. Continuity of child care is associated with better developmental outcomes as the child is able to form secure attachments with his or her caregiver and benefit from social interactions with a stable peer group (Adams, Snyder, & Sandfort, 2002b; Ha, Magnuson, & Ybarra, 2012). With instability in child care, parents may also struggle to maintain employment as they juggle child care arrangements. As a result, instability in child care can have negative two-generational implications for low-income families: job stability and financial security of parents and the household and the development of their children (Adams & Rohacek, 2010; Meyers et al., 2002).

Parents may opt not to use child care subsidies for a variety of reasons, including access to child care alternatives, such as Head Start and publicly-funded preschool (Johnson, Martin, & Brooks-Gunn, 2011); lack of knowledge about eligibility (Shlay, Weinraub, Harmon, & Tran, 2004); or a preference to not use child care. Families may also face temporary periods of ineligibility because household income is too high or a parent has lost a qualifying activity, such as a job. However, some policymakers have expressed concerns that certain program policies, which vary by state, may make it difficult for parents who need financial assistance to access and maintain child care subsidies.

To date, very little is known about how specific policies may impact a family's decision or ability to maintain coverage. Interviews with administrators and recipients suggest that states' policies can significantly affect a parent's decision to interact with the subsidy system (Adams et al., 2002b). Certain policies can also impose significant

burdens on families, making it too difficult or costly (often in the form of time) to maintain coverage. For example, some states require families to report all changes in household income, while other states only require reporting changes over a certain amount or do not require families to report changes until their eligibility is renewed. More frequently required interactions with a subsidy agency may pose a barrier to parents with inflexible work hours and may reduce the value of the subsidy for families.

This paper investigates the relationship between subsidy policies and families' maintenance of subsidies. In particular it addresses the following question: *What is the effect of states' child care subsidy policies on the stability of subsidy usage for low-income families?*

Child Care Development Fund: One block grant but fifty different programs

With 1996 welfare reform and new parental work requirements, the need for affordable child care became increasingly important for low-income families, particularly single mothers. In addition to overhauling the country's welfare program, the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) combined four federal child care subsidy programs into the Child Care and Development Block Grant (CCDBG). The main goals of CCDBG are to support parents' work efforts while improving the ability of low-income families to access quality childcare.

Under the block grant, states have greater flexibility in designing and implementing their subsidy programs than they had been given under the pre-PRWORA programs. Federal regulations are limited and only stipulate that states cover children

under the age of 13[2] and that parents need to be working or engaged in work-related activities. Additionally, states cannot use funds to cover families with income above 85 percent of the State's Median Income (SMI) and must reimburse providers at the 75th percentile of the state's market rate for child care. With limited federal regulations, states have developed vastly different program policies, including how they define work-related activities, the co-payments families must pay, how much providers are reimbursed, and the process for applying and redetermining eligibility.

States face the dual challenge of meeting the needs of low-income families and developing policies that guarantee that services are authorized at appropriate levels. Since the federal government can hold states financially accountable for coverage that is inconsistent with the federal or individual state governments' eligibility and authorization policies, states must develop policies that help minimize the incidences of improper payments. Some states have developed policies that restrict eligibility and require families to interact with the subsidy agency more often, while other states have sought to redefine eligibility parameters, such as expanding what is considered work-related activities (Adams, Snyder, & Banghart, 2008).

Previous research has mainly focused on why so few families utilize child care subsidies and the differences that exist between subsidy recipients and those who are eligible but do not receive subsidies (Shlay et al., 2004). Studies show that compared to eligible non-recipients, recipients of child care subsidies generally have higher income levels, are more proficient in English (Johnson et al., 2011), and live in female-headed households (Herbst, 2008). Families with children aged 0-5 are also more likely to utilize

[2] States can set the age limit higher for children with special needs.

subsidies, compared to those with children aged 6-12 (Herbst, 2008). Studies have also found that many families still remain eligible for the subsidy program as their spells end, suggesting that other factors may impact parents' decision to leave the program (Grobe, Weber, & Davis, 2008; Ha et al., 2012; Ha & Meyer, 2010).

This study examines the impact of three specific program policies on stability of subsidy receipt amongst low-income families: whether families can count job search towards the work eligibility requirements; the length of time a family can receive a subsidy before undergoing the re-eligibility process, commonly known as the redetermination period; and under what circumstances families need to report changes in their incomes.

Since child care subsidy eligibility is tied to a parent's work efforts and income, families may face lapses in subsidy receipt because of temporary changes in employment or income, which are common amongst low-income workers (Adams et al., 2008; Adams, Snyder, & Sandfort, 2002a; Ha et al., 2012). Some states allow parents to participate in job search as a work-related activity, often for a limited period of time. This may help parents to focus on the job search process and increase the likelihood that they find a job (Adams et al., 2002a).

The frequency of eligibility redetermination varies significantly across states, typically ranging from 6 to 12 months, and can impact a family's decision to maintain subsidy coverage. The redetermination process itself may prove burdensome, particularly for parents who are unable to take time off from work, and families may opt to let their eligibility expire (Adams et al., 2008; Ha et al., 2012). Studies have found that more frequent redeterminations are associated with shorter child care spells (Meyers et al.,

2002) and that families often leave the program the month following their redetermination period. Grobe et al (2012) found that more than half of their study population's program exits coincided with a required redetermination. After controlling for other factors related to a family's decision to exit, their study found that parents in their last month of eligibility prior to redetermination were 2.6 times more likely to exit the program than those not in their redetermination periods. Families that exited in this study continued to use other assistance programs, suggesting that they may still be income-eligible for the child care subsidy program and they are willing to receive government assistance (Grobe et al., 2008).

In addition to redetermination, most states require families to report changes in circumstances that may impact eligibility, copayment levels, and number of hours authorized for care. States vary significantly in the types of changes that parents may need to report, including work schedule, income, employment, household composition, and residency. Low-income families, in particular, can face frequent changes in their lives and, as a result of reporting policies, may find themselves interacting with the subsidy agency frequently in order to maintain eligibility (Adams et al., 2008; Adams et al., 2002b). What parents must do to report changes varies across states, but could include additional documentation requirements and applications, office visits, and even undergoing recertification.

Research on how policies may impact subsidy usage has been limited. What research has been conducted has mainly focused on the effects of policies on families within one or a handful of states. As a result, findings have been limited in their generalizability. Up until recently, it has been difficult to analyze policies across states.

However, the recent introduction of the Urban Institute's CCDF Policies Database (Giannarelli, Minton, & Durham, 2013) in 2011 provides researchers the opportunity to examine child care policies across time and all states. The current study leverages this new database to better understand the relationship between states' policies and how long families maintain subsidy coverage.

Methodology and Data Analysis

As noted above, policymakers and researchers have expressed concerns that some policies choices may create barriers for families in their efforts to maintain child subsidies, which may lead to shorter subsidy spells, and therefore to unstable family income and disruptions in child care arrangements. Based on my research, I hypothesize that:

- *When families are allowed to count job search towards their eligibility requirements, they will have longer and more stable subsidy spells*. Low-income populations can face significant job turnover and long periods of unemployment. As a result of strict eligibility requirements that obligate families to work, families may face more frequent turnovers in their subsidy spells.

- *When families have longer redetermination periods, they will have longer and more stable spells of subsidy receipt*. More frequent interaction with child care subsidy agencies may create barriers for families as they navigate the challenges of having to take unpaid time off from work and find reliable transportation.

- *Families that face less restrictive requirements around reporting changes in income will have longer and more stable subsidy spells*. Some states may require families to report all changes in income to the child care agency, which can result in long wait times on the phone with caseworkers or taking time off from work to go to the agency and complete additional paperwork. (The study assumes that most parents are compliant with the regulations and that non-compliance in evenly distributed across states and time.)

- *Finally, states that have more restrictive policies may serve more stable populations*. More restrictive policies, such as requiring families to report all changes in income or to undergo redetermination every 6 months, may be

particularly burdensome to families that have more tumultuous lives and less resources. As a result, states that have these policies in place may be serving more stables families that are likely to have longer subsidy spells.

Data Sources

To test these hypothesizes, I constructed a dataset across a four-year period (October 1, 2006 to September 30, 2010) using data on subsidy policies from The Urban Institute's CCDF Policies Data (Giannarelli et al., 2013) and child- and family-level data from the Administration for Children and Families' (ACF) CCDF Administrative Dataset (Department of Health and Human Services, Administration for Children and Families, & Administration on Children, 2010, 2011, 2012, 2013). Policy data were matched to child and family observations by state and date (month/year).

The CCDF Policies database tracks changes in state-level policies across more than 550 policy variables, including eligibility and reporting requirements and redetermination procedures. Data are coded based on states' caseworker manuals and child care regulations. The policy start and end date indicates the time frame that a policy is in place.

The CCDF administrative data set is a compilation of monthly case-level data that states and territories are required to report to the ACF's Child Care Bureau. States have the option of submitting data for the entire case population or a sample of the population that has been collected through approved sampling guidelines. States that submit a sample must submit at least 1,200 sample families each year. For states that submit full data sets, the Research Connection selects a random sample of families in proportion to

the monthly caseload.[3] The dataset contains both household- and child-level data and documents household composition, reasons for receiving care, start date of the child care subsidy, family copayment, household income, ethnicity, type of provider, number of hours authorized, and subsidy reimbursement to providers.

Missing and Duplicative Data

The original administrative dataset had more than one million observations. However, 143,427 observations were dropped because observations were duplicative, were representative of territories, were missing data on key variables, or were outliers. Because of programmatic differences and population size, territories were excluded from the analysis. For a full discussion of missing and dropped data, see Appendix A. Additionally, for policy variables, data were not available for every state during the study period of interest. (See Appendix B for a listing for the start date of each of the policies.)

Table 1. Variables

Dependent Variables	Independent Variables	Control Variables
• **Average length of subsidy spells** (months) • **Share of observed families with stable spell** (i.e., spells greater than 12 months) • **Share of observed families with unstable spells** (i.e., spells less than 6 months) • **Share of eligible children with stable spells** (i.e., spells greater than 12 months)	• **Job search eligibility** (i.e., for new and continuing recipients; only for continuing recipients; not allowed, parents must have a job) • **Redetermination period** (length of time in between when families are determined eligible and have to redetermine eligibility) • **Reporting requirements around income** (i.e., report all changes; report changes more than a certain amount; no requirements around changes in income)	• Child's age (defined as a range) • Household monthly income • TANF receipt • Single parent-headed households • Household size • State • Month • Year

[3] The dataset indicates whether the dataset was originally submitted as a full population data or as a sample. For territories, all children and families are reported. The lowest caseload sample is 200 families in a month.

As a result, those months were not included in the analysis.

Dependent Variables

I developed three dependent variables to measure subsidy receipt: average length of subsidy spells and two categorical variables of unstable spell length or stable spell length. For this analysis, a child care spell is defined as the number of months of child care subsidy receipt prior to a three-month lapse in the subsidy. In the administrative data, the start date of families' subsidy receipt is restarted after a 90-day lapse in subsidy. It's important to note that most of the literature defines a spell as the number of months prior to a one-month lapse in receipt (Grobe et al., 2008, p. 149; Ha & Meyer, 2010, p. 349; Meyers et al., 2002, p. 6). Increasing the lapse in receipt from one month to 90 days may not capture short-term churning of subsidy use and may underestimate the impact of the policies on care maintenance for the population as a whole. However, long-term lapses in childcare subsidy pose the greatest threat to stability of child care usage and parental employment.

Because the administrative dataset does not allow researchers to track families over time, the analysis focuses on the impact of policies on average spell lengths within a given month, and not the length of individual children's spell lengths (as would be measured after the spell had ended). Average spell length in a given month was calculated as the difference between the start of the child's spell and the month the data were reported. When data were collapsed to the state and month level (as described below), this measure became an average spell length for all children in the state during the given month and subgroup. To calculate the second dependent variable, children were coded as having stable, long-term coverage if they had received the subsidy for more than

12 months. When collapsed to the state and month level, this variable became the share of families receiving subsidies with stable spells. A similar method was used to calculate share of families with unstable spells. Children were considered to have short-term, unstable spells if they had received the subsidy for less than six months.

Families in the study population had an average spell length of 25.0 months. Spell lengths were not normally distributed. (See Chart 1.) More than 40 percent of all spell lengths had lasted less than 10 months when observed. Approximately 53 percent of the subsidy-receiving population was considered to have a stable spell in the given month, while about 23 percent of the population was classified as having an unstable spell.

Finally, to test the hypothesis that states with more restrictive policies serve more stable households, I calculated the share of children eligible for the subsidy program that had spells longer than 12 months. To determine the number of children eligible for the subsidy, I used data from the American Community Surveys (ACS) (Ruggles et al., 2010) to estimate the number of households with children in each state for a given year (2006-2010) with income below 85 percent of the state's median income (based on household size). It's important to note that 85 percent of median income is a federal limit and most states set their income eligibility thresholds below this threshold. The number children eligible was determined by multiplying the number of eligible households by the average number of children per eligible households in a given year and state. Finally, a dependent variable was calculated as a ratio of the number of children with stable spells in a given month and state to the number of eligible children in a given year and state. According to my estimates, approximately 2.9 percent of eligible children received the subsidy in a

given month and on average 1.4 percent of eligible children had spells longer than 12 months.

Independent Variables

The analysis focuses on the impact of three specific policy variables: eligibility based on job search, reporting requirements related to changes in income, and the length of the redetermination period. For job search eligibility, some states allow job search to count as a work eligibility activity, either for families who already receive the subsidy (known as continuing eligibility) or for all subsidy recipients. Other states do not allow job search to count as a work-related activity and require at least one parent to be employed. For the redetermination period, the analysis looks at the length of time between when a child is declared eligible and when the child must redetermine his or her eligibility. Finally, the policy variable related to changes in income documents whether a state requires a family to report all changes in income, only changes over a certain amount, or no changes in income. A couple of states also have unique policies that are categorized as "Other" in the analysis. Observations were coded with the state's policy for the given month.

For all three variables, there is variation across states and within states over time. Table 2 provides a breakdown of policies by state and month. The three policies are in place in each state, but vary in how the combination of policies. For example, according to the first cell in the table, there was 292 state and month combinations that had the following policies in place: allowed job search for all, required families to undergo re-eligibility after six months, and required families to report all changes in income. As can be seen, most states across the study had policies in place that required families to report

all changes in income. Policies related to job search eligibility and redetermination period are more mixed, but most states allowed for job search to count as an eligibility activity and had 6-month redetermination periods in place. (See Appendix C for a summary of states' policies and to see how policies changed during the study period.)

Age Group and subsidy length.

The average age of a child in the dataset was 58.7 months, or just about 5 years of age, and the average spell length was 25.0 months. Subsidy usage can vary significantly based on a child's age, particularly in the early years when parents may have different preferences for child care and cost of care can be significantly higher for infants and toddlers. As a result, the analysis breaks subsidy receipt into five distinct groups: : 0-23 months (infants)[4]; 24-35 months (2-year-olds); 36-47 months (3-year-olds); 48-59 months (4-year-olds), and children older than 60 months (five years or older). Subsidy usage for the oldest group is particularly challenging given that other factors can compound care usage, such as schooling; access to alternative child care resources, such as Head Start and public pre-kindergarten; and differences in parental employment as a result of a child's age. As can be seen in Table 4, average spell length ranged from 14.7 months for infants to 33.0 months for children five years or older. The analysis controls for child age.

TANF recipients and Single Parent Households

The impact of policies on the recipients of Temporary Assistance to Needy Families (TANF) remains an important area of focus for subsidy policies, given the close

[4] The infant category can be particularly challenging. A 5-month-old child, who has been in care for most of his or her life, will be categorized as having short-term care because technically he or she cannot be in care for more than 5 months.

ties that the CCDBG program has to welfare reform and the vulnerability of this population because of increasing restrictions in the TANF program. Since 1996 the percentage of child care subsidy recipients who also receive TANF has rapidly declined, mainly due to declines in TANF caseloads. During the study period, only 18.1 percent of subsidy recipients received TANF. In addition to controlling for TANF receipt in the main analysis, a subgroup analysis was run to determine if the policies impact TANF recipients differently.

Single-parent households are the main recipients of child care subsidies, making up approximately 90 percent of subsidy recipients. Because of the nature of single parent households, these families may have different child care needs than two-parent households. The main analysis controls for single-parent households.[5]

Model Overview

The child-level observations were collapsed to the state and month level by age groups, single-parent households, and TANF receipt. As a result, the three dependent variables measuring length of subsidy spells became: average subsidy spell; share of families categorized as having stable spells; and share having unstable spells for the given state, month, and subgroups. When looking at the share of eligible children with stable spells, the analysis collapsed child-level observations by state and month.

To calculate the effect of policies on subsidy receipt, OLS regressions were run using fixed state and time (month and year) effects. Standard errors were clustered at the state-level and data were weighted by cell size. The regression is specified as follows:

$$(1)\ S_i = \beta_0 + \beta_1 * P_{i,t} + \beta_2 * X_{i,t} \ldots + \gamma_i + \lambda_t + \varepsilon_i$$

[5] Results are highly similar when two-parent families are excluded from the analysis.

where S_i is subsidy spell length (average spell length, share stable spells, or share unstable spells), Pi,t is the policy of interest in state i in month t, $X_{i,t}$ are control variables, γ_i is fixed state effects, λ_t is month-year effects, and ε_i is the error term. Separate regressions were run for each of the independent and dependent variables, for a total of nine regressions in the main analysis.

Results

Job Search Eligibility

States that did not allow job search as a work-eligibility requirement had significantly longer average spell lengths and a greater proportion of families with stable spells. In these states, the policies were associated with a 2.1 months increase ($p<0.01$) in average spell length than states that allowed job search for all child care recipients. No job search eligibility was also associated with a 8.3 percentage points increase ($p<0.01$) in share of families with stable spells and 6.3 percentage point decrease ($p<0.01$) in share of families with unstable spells. (See Table 5.)

This finding ran counter to original hypotheses, which lead me to consider whether more stable families were receiving the subsidy in states that were not allowing job search as a work eligibility activity. In the main analysis, the share of stable spells is measured as a proportion of children receiving the subsidy. To test this new hypothesis, I used the share of stable spells based on the number of children in the state who were eligible for the subsidy.

When looking at the effect of policies based on the share of eligible children with stable spells, there is a negative relationship between policies that do not allow job search as work eligibility activity and the share of children with stable spells. On average,

1.4 percent of children who were eligible for the subsidy had stable spells. A policy that disallowed job search as a work eligibility activity was associated with 0.16 percentage point decrease ($p<0.01$) in share of eligible children with a stable spell, or a more than 10 percent decrease in eligible children with a stable spell (See Table 5). This may confirm the hypothesis that states that do not allow job search to count towards eligibility may on average be serving a more stable population. Therefore, the relationship between the policies and spell length cannot be accurately captured only looking at current subsidy recipients. However, when looking at the total eligible population there appears to be a significant negative effect.

When a sub-analysis is conducted looking at TANF recipients, there is a negative relationship between policies that do not allow job search as a work eligibility activity and length and stability of subsidy spells. (See Table 6.) This policy is associated with 0.9 month decline in average spell length for TANF recipients ($p<0.01$). The average spell length for TANF recipients was 16.9 months, meaning the policy had a 5.3 percent negative effect on spell length. As was noted above, states where job search eligibility is not allowed may be serving a more stable population that does not face the same levels of high unemployment or job turnover. In this sense, the TANF population may be a better indicator of the receipt for less stable populations. TANF families, on average, have lower household incomes than other recipients of the child care subsidy. The median monthly household income for TANF ($896.31) recipients was 40 percent lower than the median income of the entire study population ($1458.91). For non-TANF recipients the median monthly household income was $1546.29. As a result of limited resources, TANF

recipients may find it difficult to pay child care copays and may face more day-to-day challenges in making ends meet which may impact stability of child care.

Redetermination Period

The length of the redetermination period did have a significant impact on average spell length and share of families with either stable or unstable spells. A one-month increase in the redetermination period was associated with a 0.4 month decrease in average spell length ($p<0.05$). Based on these estimates, a 12-month redetermination period would be associated with a decrease of 5.2 months in average spell length. The relationship of redetermination periods runs counter to initial notions of the impact it may have on families' subsidy use. It has been proposed that shorter redetermination periods may create barriers as more frequent interactions may disincentivize families from continuing this subsidy. When a secondary analysis was conducted looking at the effect of the policy on the share stables spells of all eligible children, there was no significant relationship between the policy and share of stable spells. (See table 7).

When focusing on the share of families with stable or unstable spells, the results are even more mixed. A one-month increase in the redetermination period is associated with a 0.56 percentage point increase in share of families with stable spells ($p<0.01$), or a 3.5 percentage point increase for state's with 12-month redetermination periods compared to ones with 6-month redetermination periods. The policy was also associated with a 0.72 percentage point increase in share of families with unstable spells ($p<0.01$), or an 4.3 percentage point increase in stable spells for a 12-month redetermination period.

While at first glance these two measures may run counter to one another, it may point to a polarization of spell lengths and other factors that might be influencing spell length.

While more frequent redeterminations may discourage families from continuing their subsidies, one could also argue that frequent redeterminations may allow families to address unresolved issues – such as reporting requirements or issues with their copayments – that have prevented them from maintaining their subsidies. As is discussed in greater detail below, the mixed results may point to a larger issue related to the implementation of policies locally. (See the discussion below on local bureaucracies).

When isolating the TANF population, the relationship between the policy and average spell length becomes less significant ($p<0.1$) but does not change much in value compared to the main analysis and a sub-analysis of non-TANF recipients. (See Table 8.) A one-month increase in the redetermination period was associated with 0.5 month decrease in average spell length. A significant relationship does exist for share of stable and unstable spells, with a one month increase in length of time between redetermination associated with 1.8 percentage point decrease in stable spells ($p<0.01$) and a 2.0 percentage point increase in unstable spells ($p<0.01$). These are relatively large effects given that a 12-month redetermination period was associated with a 21.6 percentage point decrease in stable spells and a 24 percentage point increase in unstable spells.

Reporting Changes in Income

The analysis supported the hypothesis that families that face fewer reporting requirements are likely to have longer subsidy spells. In states that required families to report no changes in income in between redetermination periods, children were likely to

have subsidy spells that were 3.3 months longer ($p<0.05$) compared to children living in states where all changes in income have to be reported. (See Table 9.) Similarly, states with no reporting requirements around income had an estimated 9.7 percentage point increase in share of families with stable spells ($p<0.01$) and a 6.3 percentage point decrease in families with unstable spells ($p<0.05$).

When looking at states that require families to report only certain changes in income (e.g., changes greater than $200 in monthly income) the relationship is less clear. According to the analysis, living in a state that required certain levels of changes to be reported was associated with a decrease of 2.6 months in average spell length ($p<0.01$). There was no significant relationship between the policy and share of stable spells. The relationship between this policy and unstable spells was only significant at the 10 percent level, and was associated with a 2.4 percentage point decrease in unstable spells. This policy could be viewed as having a more limited impact as families may remain confused about when they have to report changes in income. Additionally, few states actually hold this policy. During the study period, only six states had the policy in place and two other states changed their policies. (It is important to note that even fewer states (N=5) allow families to report no changes in income.) Finally, other factors, such as local implementation, may have a greater impact on subsidy spell length.

Policies related to reporting changes in income appear to have a greater impact on TANF populations. (See Table 10.) Policies that don't require families to report changes in income were associated with a 6.9 month increase in average spell length ($p<0.01$) for TANF recipients, compared to a 2.4 month increase in spell length ($p<0.1$) for non-TANF recipients. The effect of policies that require families to report some changes in

income also differed between TANF recipients and children not receiving TANF. In the main analysis, there was a negative relationship between this policy and average spell length. However, when looking at TANF recipients the relationship becomes positive for average spell length and share of stable spells. The policy was associated with a 2.0 month increase in average spell length ($p<0.01$) and a 10 percentage point increase in share of stable spells ($p<0.01$). For non-TANF recipients, the policy is associated with a 3.1 decrease in average spell length ($p<0.01$), but the relationship between share of stable and unstable spells is no longer significant.

TANF recipients may be more sensitive to policies that will require more frequent interactions with the subsidy agency. To report household changes, such as income or household size, families typically must call or visit the agency and complete necessary paperwork. These additional barriers may be particularly challenging for TANF families, who have fewer financial resources.

Similar to the TANF population, there is a significant positive relationship between share of eligible children with stables spells and policies that only require families to report some changes or no changes in income. In states that required families to only report changes in income over a certain amount, the policy was associated with a 0.4 percentage point increase ($p<0.01$) in share of spells longer than 12 months, or an almost 30 percent increase in the share of eligible children with stable spells. The effect was even larger when looking at states that don't require families to report changes in income in between redetermination periods. The policy was associated with 0.63 percentage point increase in share of stable spells, or a 45 percent increase in eligible children with spells longer than 12 months.

Interaction of policies

The analysis also looked at the effect of the policies together on maintenance of spells. As noted above and summarized in Table 2, states have implemented these policies in a number of different ways and combinations. A state that had less restrictive policies (i.e., allowed job search, required families to only report some or no changes in income, and a 12-month redetermination period) was associated with a 2.3 percentage point increase ($p<0.01$) in share of eligible children with spells longer than 12 months. (See Table 11.) This is relatively large effect given that the average share of eligible children with spells was 1.6 percent.

Policies related to reporting changes in income appear to have the largest effect on stability of spells. In states that had longer redetermination periods and only required families to report some or no changes but did not allow job search, the policies were associated with a 2.2 percentage point increase ($p<0.01$) in share of eligible children with stable spells. In states that allowed job search and had less restrictive requirements around reporting changes in income but had 6-month redetermination periods, the policies were associated with a 0.9 percentage point increase ($p<0.01$) in share of eligible children with spells longer than 12 months.

The effects of less restrictive redetermination periods and job search eligibility have a smaller effect on stability of spells compared to reporting changes in income. A combination of policies that require families to report all changes in but had longer redetermination periods and allowed job search were associated with only 0.4 percentage

point increase in share of stable spells. The interaction between 12-month redetermination periods and job search for all is not significant.

These results should be interpreted with caution as relatively few states had a combination of less restrictive policies in place during the study. For example, only two states (Louisiana and Maine) had the combination of all three less restrictive policies and only three states (Kansas, Louisiana, and Michigan) had less restrictive reporting requirements around changes in income, 12-month redetermination periods, and did not allow job search eligible at some point during the study period. Other factors in these states – particularly in Louisiana, which changed its policies around job search during the study – may be impacting the length of subsidy spells.

Discussion

The analysis indicates that subsidy polices may have some effect on families' maintenance of child care subsidies but the story may be more complicated than originally hypothesized. When analyzing the impact of policies related to job search as a work eligibility activity, policies that did not allow job search to count as an eligibility activity were associated with an increase in the average length and stability of spells. At first glance this runs counter to initial hypotheses that more lenient eligibility requirements may give families greater flexibility and allow them to maintain subsidies for longer. However, when the analysis is re-run looking at the TANF population and the share of eligible children with stable spells, the policy is associated with a decrease in average spell length. I extended my analysis to hypothesize that states do not allow job search may be serving a more stable population. As a result, the only looking at a share of

observed spells may not adequately capture the effect of the policy on subsidy maintenance.

The effects of redetermination policies were also mixed, with the policy associated with both an increase in the share of stable spells and unstable spells. Previous research has shown that families are at increased risk of ending their subsidy spells around the time of their redetermination. The policy may have a limited effect on families only around the time of their redetermination, an effect that the current dataset is not able to capture.

Requirements around reporting changes in income also had a significant effect on spell length and stability. In particular, there was a positive association between policies that don't require families to report changes in income and average spell length and share of children with stable spells. This supports the hypothesis that more frequent interaction with child care agency may create barriers for families in maintaining their subsidies.

Most notable in this analysis is the different effect that policies may have on the TANF population, in particular. Since welfare was reformed nearly two decades ago, there has been a significant decline in the number of recipients and the size of benefits. Some policymakers and researchers have expressed concerns that those left on the rolls may be more vulnerable and even more lacking in resources. As can be seen in the analysis, requirements related to eligibility based on job search and reporting requirements around income have a significant relationship with how long TANF families maintain their subsidies. In particular, in states that allowed job search to count as a work eligibility requirement or did not require changes in income to be reported, there was an increase in the average length and stability of spells.

Some scholars have expressed concerns that as TANF caseloads continue to fall, those still left on the rolls would be families that face significant barriers to employment and other risk factors for persistent poverty. However, studies show that the demographics of the TANF population have remained relatively the same since 1996 welfare reform (Loprest, 2012) and that women have higher earnings under the TANF program and face fewer material hardships. However, many TANF recipients still report facing some hardships, such as food insecurity, and struggle to make ends meet (Danziger, Corcoran, Danziger, & Heflin, 2000). In this study, the TANF population's average monthly income was less than half the size of the non-TANF population's income. Special attention may be warranted to how policies affect the TANF population and those transitioning off of welfare.

This study has several limitations that may impact the generalizability of results and prevent one from drawing causal conclusions. One of the main limitations is the assumption that caseworkers are implementing policies according to the state regulations. A great deal of literature has analyzed how local implementation can vary significantly from federal or state-level policies for a variety of local factors, including caseworkers' preferences, caseworkers' coping mechanisms for dealing with large caseloads, and local culture and office politics (Lipsky, 2010). All of these factors may alter how policies take place and the experiences that families have with the program. For example, a caseworker could continue a family's subsidy even if the parent has been laid off and the state does not allow job search as an eligibility activity. Or, a family may decide to end its subsidy because of a poor interaction with the subsidy agency, despite living in a state with relatively lenient policies.

Another limitation to this study is that it looks at average spell length in a given month, but does not measure when a family leaves the program. With a dataset that tracks families over time, researchers could analyze the timeframe in which people leave the program in relation to the policy and the actual length of family's spells. The study also draws on administrative data, which can be a particularly rich source of information since it may be more reliable than self-reported survey data and contains details of family eligibility and subsidy levels (Ha & Meyer, 2010, p. 348; Johnson et al., 2011, p. 1081). However, with any administrative data set one must be concerned about the quality of the data and whether caseworkers inputted data properly.

The study also takes a macro-level view and may not capture informal practices that localities may have to help families maintain subsidies, such as increased outreach to families who are at risk of losing the subsidy or have fallen off the books. The study assumes that if these practices exist they are constant over time. The model also looks at policies broadly and does not capture more specific details about policies. For example, some states have shorter time limits on how long families can count job search as a work eligibility requirement. Additionally, while the study attempts to control for the interaction of the three policies with one another, child care subsidy programs have a host of other policies that may also have an impact on subsidy length, such as the size of subsidies and the types of care that families can use subsidies for. Finally, the study was limited to a four-year period given the available dataset.

The introduction of the policies database offers researchers the opportunity to better understand the effects of policies on families. With more extensive administrative datasets, researchers could follow families over time to better understand when they leave

the program and if and when they continue receiving subsidies. This will help policymakers better understand how policies affect the length of subsidy spells and whether the policies result in short or permanent breaks in subsidy usage.

Studying the effect of policies continues to be an important area of consideration, given that states continue to develop divergent policies with limited understanding of the impact that these policies may have on recipients. States are in a challenging position to craft policies that allow them to provide appropriate levels of subsidies while also serving families in need of subsidized child care. Studies such as this analysis offer an opportunity to identify policies that are the most restrictive and may have the greatest impact on subsidy length and to consider how these policies may be better shaped to serve families. Finally, additional attention may be warranted to TANF populations and those transitioning off welfare. As the analysis showed, the length of spells for the TANF population is strongly related to the types of policies that states implement. Better understanding this relationship may help states to be tailor policies to support this highly at-risk population.

Works Cited

Adams, Gina, & Rohacek, Monica. (2010). Child Care Instability: Definitions, Context, and Policy Implications (pp. 1-45): The Urban Institute.

Adams, Gina, Snyder, Kathleen, & Banghart, Patti. (2008). Designing Subsidy Systems to Meet the Needs of Families: An Overview of Policy Research Findings (pp. 1-62): The Urban Institute.

Adams, Gina, Snyder, Kathleen, & Sandfort, Jodi R. (2002a). Getting and Retaining Child Care Assistance: How Policy and Practice Influence Parents' Experiences *Assessing the New Federalism* (pp. 1-119): The Urban Institute.

Adams, Gina, Snyder, Kathleen, & Sandfort, Jodi R. (2002b). Navigating the Child Care Subsidy System: Policies and Practices that Affect Access and Retention *New Federalism: Issues and Options for States* (pp. 1-7): The Urban Institute.

Administration for Children and Families (DHHS), Office of Child Care. (2012, 19 September 2012). Characteristics of Families Served by Child Care and Development Fund (CCDF) Based on Preliminary FY 2011 Data. Retrieved 29 September 2013, 2013, from http://www.acf.hhs.gov/programs/occ/resource/characteristics-of-families-served-by-child-care-and-development-fund-ccdf

Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services. (2010). Estimates of Child Care Eligibility and Receipt for Fiscal Year 2006. Washington, DC: U.S. Department of Health and Human Services.

Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services. (2012). *Estimates of Child Care Eligibility and Receipt for Fiscal Year 2009*. Washington, DC.

Child Care Bureau, Office of Family Assistance. (2009). Flexibility in the Child Care and Development Fund (CCDF) Program (Information Memorandum). In O. o. C. C. Administration for Children and Families (DHHS) (Ed.).

Danziger, Sandra, Corcoran, Mary, Danziger, Sheldon, & Heflin, Colleen M. (2000). Work, income, and material hardship after welfare reform. *The Journal of Consumer Affairs, 34*(1), 6-30.

Department of Health and Human Services, Administration for Children and Families, & Administration on Children, Youth, and Families,. (2010). Child Care and Development Fund Administrative Data, Federal Fiscal Year 2007 (CCDF) [United States].

Department of Health and Human Services, Administration for Children and Families, & Administration on Children, Youth, and Families,. (2011). Child Care and

Development Fund Administrative Data, Federal Fiscal Year 2008 (CCDF) [United States].

Department of Health and Human Services, Administration for Children and Families, & Administration on Children, Youth, and Families,. (2012). Child Care and Development Fund Administrative Data, Federal Fiscal Year 2009 (CCDF) [United States].

Department of Health and Human Services, Administration for Children and Families, & Administration on Children, Youth, and Families,. (2013). Child Care and Development Fund Administrative Data, Federal Fiscal Year 2010 (CCDF) [United States].

Giannarelli, Linda, Minton, Sarah, & Durham, Christin. (2013). Child Care and Development Fund (CCDF) Policies Database, 2012.

Grobe, Deana, Weber, Roberta B., & Davis, Elizabeth E. (2008). Why Do They Leave? Child Care Subsidy Use in Oregon. *Journal of Family and Economic Issues, 29*(1), 110-127. doi: http://dx.doi.org/10.1007/s10834-007-9094-3

Ha, Yoonsook, Magnuson, Katherine, & Ybarra, Marci. (2012). Patterns of child care subsidy receipt and the stability of child care. *Children and Youth Services Review, 34*(9), 1834-1844. doi: http://dx.doi.org/10.1016/j.childyouth.2012.05.016

Ha, Yoonsook, & Meyer, Daniel R. (2010). Child care subsidy patterns: Are exits related to economic setbacks or economic successes? *Children and Youth Services Review, 32*(3), 346-355. doi: http://dx.doi.org/10.1016/j.childyouth.2009.10.004

Herbst, Chris M. (2008). Who are the eligible non-recipients of child care subsidies? *Children and Youth Services Review, 30*(9), 1037-1054. doi: http://dx.doi.org/10.1016/j.childyouth.2008.01.003

Herbst, Chris M., & Tekin, Erdal. (2013). Child Care Subsidies, Maternal Health, and Child-Parent Interactions: Evidence from Three Nationally Representative Datasets. *Health Economics (Forthcoming)*.

Johnson, Anna D., Martin, Anne, & Brooks-Gunn, Jeanne. (2011). Who uses child care subsidies? Comparing recipients to eligible non-recipients on family background characteristics and child care preferences. *Children and Youth Services Review, 33*(7), 1072-1083. doi: http://dx.doi.org/10.1016/j.childyouth.2011.01.014

Laughlin, Lynda. (2013). Who's MInding the Kids? Child Care Arrangements: Spring 2011. In U. S. C. Bureau (Ed.), *Household Economic Studies*: U.S. Census Bureau.

Lipsky, Michael. (2010). *Street-Level Bureaucracy: Dilemmas of the Individual in Public Service*. New York: Russell Sage Foundation.

Loprest, Pamela J. . (2012). How Has the TANF Caseload Changed Over Time? : The Urban Institute.

Meyers, Marcia K. , Peck, Laura P. , Davis, Elizabeth E., Collins, Ann, Kreader, J. Lee, Georges, Annie, . . . Olson, Jerry A. . (2002). The Dynamics of Child Care Subsidy Use: A Collaborative Study of Five States (pp. 1-60): National Center for Children in Poverty.

Ruggles, Steven, Alexander, J. Trent, Genadek, Katie, Goeken, Ronald, Schroeder, Matthew B., & Sobek, Matthew (2010). *Integrated Public Use Microdata Series: Version 5.0*

Schulman, Karen, & Blank, Helen. (2010). Supporting State Child Care Efforts with American Recovery and Reinvestment Act Funds. In N. W. s. L. Center (Ed.). Washington, DC: National Women's Law Center.

Shlay, Anne B., Weinraub, Marsha, Harmon, Michelle, & Tran, Henry. (2004). Barriers to subsidies: why low-income families do not use child care subsidies. *Social Science Research, 33*(1), 134-157. doi: http://dx.doi.org/10.1016/S0049-089X(03)00042-5

U.S. Government Accountability Office (GAO). (2003). *Recent State Policy Changes Affecting the Availability of Assistance for Low-Income Families*. (GAO-03-588). Washington, DC: U.S. Government Accountability Office (GAO).

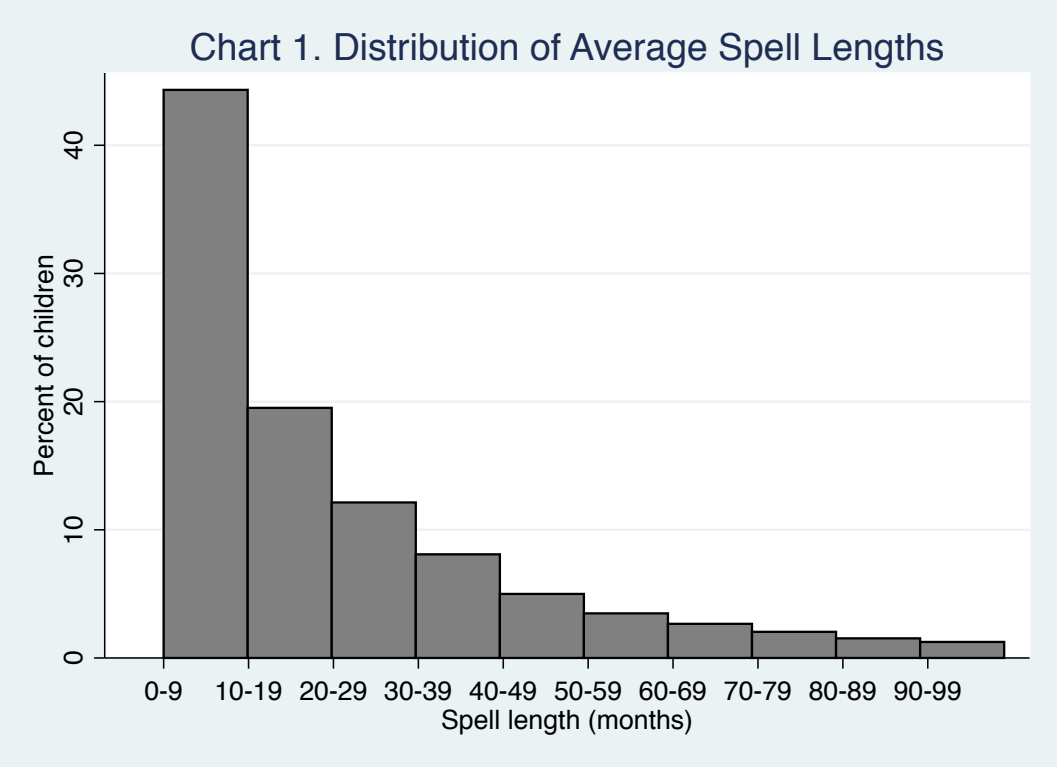

Table 2. Breakdown of state policies across all three policies by state and month.

Job Search Policy and Redetermination Policy (months)		Reporting Changes in Income Policy			
Job Search for all		All Changes	Some Changes	No Changes	Other Policy
	6 months	292	36	3	31
	12 months	241	16	0	9
Job Search for Continuing					
	6 months	322	**37**	120	**0**
	12 months	127	12	0	0
No Job Search					
	6 months	134	11	0	51
	12 months	118	90	0	19

The number represents the number of states by month that had the three policies in place

Table 3: Descriptive Statistics: Child-level observations

	Mean/ Frequency	Std. Dev.	N	Weighted N
Child's Age (months)	60.6	37.3	724,801	5,466,708
Monthly Household Income	$1,496.47	$986.95	724,612	5,464,670
Household size	3.7	1.4	724,801	5,466,708
Single-Parent Headed Households (yes = 1)	89.5%	0.31	724,801	5,466,708
TANF Recipients	18.1%	0.38	724,801	5,466,708
Length of Spell (months)	25.0	29.2	724,801	5,466,708
Race/Ethnicity of Child				
Hispanic	19.7%	0.40	716,914	5,411,403
Black	47.9%	0.50	710,353	5,372,511
White	45.2%	0.50	710,492	5,372,800
Asian	1.4%	0.12	710,334	5,372,472
Native American	1.5%	0.12	710,335	5,372,474
Pacific Islander	1.5%	0.12	710,334	5,372,472

Table 4: Average Spell Length by Age Group

Age Group	N	% of all children	Spell Length (months) Mean	SD
Infants (0-23 months)	162,532	18.1%	14.7	22.0
Two-Year Olds (24-35 months)	120,653	13.5%	18.0	22.3
Three-Year Olds (36-47 months)	62,414	7.0%	19.7	23.1
Four-Year Olds (48-59 months)	173,879	19.4%	22.3	24.3
Five years and older (60+ months)	376,448	42.0%	33.0	33.5
All Children	895,926	100.0%	25.0	29.1

Table 5: OLS Regression results for impact of policies related to job search eligibility

	Share of eligible children with spells of more than 12 months	Share of children with spells of more than 12 months	Share of children with spells of less than 6 months	Average Spell (months)
Job Search				
For continuing eligible	-0.04%	-5.24%	4.06%	-2.123
	(0.002)	(0.041)	(0.045)	(1.627)
No Job Search allowed	-0.16% ***	8.27% **	-6.35% ***	2.088 ***
	(0.001)	(0.033)	(0.011)	(0.460)
Child Age				
24-35 months		13.00% ***	-7.96% ***	2.599 ***
		(0.009)	(0.007)	(0.386)
36-47 months		15.70% ***	-8.66% ***	3.928 ***
		(0.016)	(0.009)	(0.756)
48-59 months		19.20% ***	-11.20% ***	5.944 ***
		(0.014)	(0.008)	(0.899)
60 months and older		26.30% ***	-13.80% ***	14.82 ***
		(0.012)	(0.007)	(1.658)
Household Income (monthly)		0.00% ***	0.00% ***	0.000796
		(0.000)	(0.000)	(0.001)
Single-Parent Headed Household (Yes = 1)		12.40% ***	-7.04% ***	8.062 ***
		(0.013)	(0.008)	(1.623)
TANF Recipient (yes = 1)		-12.60% ***	8.87% ***	-5.595 ***
		(0.033)	(0.023)	(1.548)
Household Size		2.90% ***	-1.42% ***	3.222 ***
		(0.004)	(0.003)	(0.779)
Intercept	1.54% ***	26.60% ***	39.60% ***	7.959 **
	(0.001)	(0.054)	(0.053)	(3.747)
Observations	1,669	4,556,206	4,556,206	4,556,206
R-squared	0.884	0.492	0.319	0.592

State and year indicator variables are also included in the model. Robust standard errors (clustered at the state-level) are provided in parentheses. Job Search eligibility for continuing and newly eligible and infants are contained in the intercept.

*** p<0.01, ** p<0.05, * p<0.1

Table 6: Subgroup Analysis: TANF v. Non-TANF OLS Regression results for impact of policies related to job search eligibility

	TANF Recipients			Non-TANF Recipients		
	Stable Spells (Share of children)	Unstable Spells (share of children)	Average Spell (months)	Stable Spells (Share of children)	Unstable Spells (share of children)	Average Spell (months)
Job Search						
For continuing eligible	-6.40%	2.89%	-2.1	-4.80%	4.16%	-1.934
	(0.059)	(0.055)	(1.755)	(0.037)	(0.042)	(1.520)
No Job Search allowed	-2.44% **	1.42%	-0.904 ***	11.00% **	-8.41% ***	3.008 ***
	(0.011)	(0.025)	(0.327)	(0.052)	(0.018)	(0.986)
Child Age						
24-35 months	9.75% ***	-8.20% ***	2.237 ***	14.00% ***	-7.91% ***	2.831 ***
	(0.012)	(0.009)	(0.409)	(0.009)	(0.009)	(0.434)
36-47 months	11.40% ***	-8.54% ***	2.895 ***	17.00% ***	-8.67% ***	4.354 ***
	(0.017)	(0.010)	(0.588)	(0.016)	(0.010)	(0.851)
48-59 months	14.30% ***	-10.10% ***	4.504 ***	20.50% ***	-11.40% ***	6.438 ***
	(0.016)	(0.010)	(0.744)	(0.015)	(0.009)	(0.998)
60 months and older	18.50% ***	-11.80% ***	9.643 ***	28.20% ***	-14.20% ***	16.02 ***
	(0.017)	(0.010)	(2.282)	(0.011)	(0.008)	(1.659)
Household Income (monthly)	0.00% ***	0.00% ***	0.0015 ***	0.00% **	0.00% ***	0.000312
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Single-Parent Headed Household (Yes = 1)	6.84% ***	-2.62%	4.187 ***	12.90% ***	-7.46% ***	8.517 ***
	(0.026)	(0.017)	(1.307)	(0.014)	(0.009)	(1.733)
Household Size	1.70% ***	-0.50%	2.036 **	3.37% ***	-1.75% ***	3.603 ***
	(0.005)	(0.003)	(0.996)	(0.004)	(0.002)	(0.815)
Intercept	13.10% *	54.10% ***	0.903	10.70% **	46.20% ***	-8.636
	(0.071)	(0.062)	(4.889)	(0.046)	(0.048)	(6.538)
Observations	799,379	799,379	799,379	3,756,827	3,756,827	3,756,827
R-squared	0.445	0.242	0.566	0.491	0.325	0.603

State and year indicator variables are also included in the model. Robust standard errors (clustered at the state-level) are provided in parentheses. Job Search eligibility for continuing and newly eligible and infants are contained in the intercept.
*** p<0.01, ** p<0.05, * p<0.1

TABLE 7: OLS Regression results for impact of policies related to length of redetermination period

	Share of eligible children with spells of more than 12 months	Share of children with spells of more than 12 months	Share of children with spells of less than 6 months	Average Spell (months)
Redetermination Period (months)	0.04%	0.56% **	0.72% ***	-0.437 ***
	(0.000)	(0.002)	(0.001)	(0.145)
Child Age				
24-35 months		13.20% ***	-8.38% ***	2.657 ***
		(0.009)	(0.007)	(0.416)
36-47 months		15.80% ***	-8.98% ***	3.886 ***
		(0.017)	(0.009)	(0.812)
48-59 months		19.10% ***	-11.50% ***	5.9 ***
		(0.015)	(0.007)	(0.960)
60 months and older		26.30% ***	-14.20% ***	15.02 ***
		(0.013)	(0.006)	(1.777)
Household Income (monthly)		0.00% ***	0.00% ***	0.000926
		(0.000)	(0.000)	(0.001)
Single-Parent Headed Household (Yes = 1)		12.50% ***	-7.36% ***	8.34 ***
		(0.014)	(0.008)	(1.723)
TANF Recipient (yes = 1)		-12.60% ***	8.83% ***	-5.564 ***
		(0.034)	(0.023)	(1.570)
Household Size		2.74% ***	-1.35% ***	3.248 ***
		(0.004)	(0.003)	(0.829)
Intercept	1.13% ***	5.13%	46.10% ***	-6.086
	(0.002)	(0.037)	(0.019)	(6.606)
Observations	1,669	4,251,586	4,251,586	4,251,586
R-squared	0.884	0.501	0.326	0.595

State and year indicator variables are also included in the model. Robust standard errors (clustered at the state-level) are provided in parentheses. Infants are contained in the intercept.
*** p<0.01, ** p<0.05, * p<0.1

Table 8. Subgroup Analysis: TANF v. Non-TANF OLS Regression results for impact of policies related to length of redetermination period

	TANF Recipients			Non-TANF Recipients		
	Stable Spells (Share of children)	Unstable Spells (share of children)	Average Spell (months)	Stable Spells (Share of children)	Unstable Spells (share of children)	Average Spell (months)
Redetermination Period (months)	-1.81% ***	2.03% ***	-0.499 *	0.65% ***	0.65% ***	-0.498 ***
	(0.005)	(0.003)	(0.264)	(0.002)	(0.001)	(0.110)
Child Age						
24-35 months	9.74% ***	-8.30% ***	2.231 ***	14.30% ***	-8.41% ***	2.928 ***
	(0.012)	(0.009)	(0.417)	(0.009)	(0.008)	(0.465)
36-47 months	11.40% ***	-8.65% ***	2.912 ***	17.10% ***	-9.05% ***	4.338 ***
	(0.017)	(0.010)	(0.602)	(0.018)	(0.010)	(0.926)
48-59 months	14.30% ***	-10.20% ***	4.508 ***	20.40% ***	-11.80% ***	6.429 ***
	(0.016)	(0.010)	(0.755)	(0.016)	(0.008)	(1.080)
60 months and older	18.60% ***	-11.90% ***	9.715 ***	28.30% ***	-14.70% ***	16.32 ***
	(0.018)	(0.010)	(2.327)	(0.012)	(0.006)	(1.781)
Household Income (monthly)	0.00% ***	0.00% ***	0.00152 ***	0.00% ***	0.00% ***	0.000477
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Single-Parent Headed Household (Yes = 1)	6.91% **	-2.77%	4.204 ***	13.10% ***	-7.87% ***	8.895 ***
	(0.026)	(0.017)	(1.329)	(0.015)	(0.009)	(1.842)
Household Size	1.71% ***	-0.50%	2.057 **	3.19% ***	-1.67% ***	3.653 ***
	(0.005)	(0.003)	(1.009)	(0.004)	(0.002)	(0.877)
Intercept	17.40% ***	45.20% ***	1.676	2.04%	47.40% ***	-8.518
	(0.054)	(0.037)	(6.165)	(0.032)	(0.018)	(6.792)
Observations	785,987	785,987	785,987	3,465,599	3,465,599	3,465,599
R-squared	0.447	0.243	0.567	0.501	0.337	0.607

State and year indicator variables are also included in the model. Robust standard errors (clustered at the state-level) are provided in parentheses. Infants are contained in the intercept.
*** p<0.01, ** p<0.05, * p<0.1

Table 9. OLS Regression results for impact of policies related to reporting change in income

	Share of eligible children with spells of more than 12 months	Share of children with spells of more than 12 months	Share of children with spells of less than 6 months	Average Spell (months)
Reporting Change in Income				
Report Some Changes	0.41% ***	0.66%	-2.39% *	-2.404 ***
	(0.001)	(0.021)	(0.013)	(0.734)
Report No Changes	0.63% ***	9.81% ***	-6.37% **	3.313
	(0.001)	(0.025)	(0.028)	(1.626)
Other Policy	-0.03%	-0.92%	0.17%	-1.124
	(0.001)	(0.019)	(0.011)	(1.033)
Child Age				
24-35 months		13.00% ***	-7.96% ***	2.599 ***
		(0.009)	(0.007)	(0.386)
36-47 months		15.70% ***	-8.66% ***	3.931 ***
		(0.016)	(0.009)	(0.757)
48-59 months		19.20% ***	-11.20% ***	5.945 ***
		(0.014)	(0.008)	(0.899)
60 months and older		26.30% ***	-13.80% ***	14.82 ***
		(0.012)	(0.007)	(1.658)
Household Income (monthly)		0.00% ***	0.00% ***	0.000808
		(0.000)	(0.000)	(0.001)
Single-Parent Headed Household (Yes = 1)		12.40% ***	-7.07% ***	8.072 ***
		(0.013)	(0.008)	(1.624)
TANF Recipient (yes = 1)		-12.60% ***	8.85% ***	-5.586 ***
		(0.033)	(0.023)	(1.548)
Household Size		2.90% ***	-1.42% ***	3.221 ***
		(0.004)	(0.003)	(0.779)
Intercept	1.21% ***	-1.66%	56.20% ***	-11.48 *
	(0.001)	(0.042)	(0.029)	(6.441)
Observations	1,669	4,556,206	4,556,206	4,556,206
R-squared	0.885	0.491	0.319	0.591

State and year indicator variables are also included in the model. Robust standard errors (clustered at the state-level) are provided in parentheses. Recipients who have to report all changes in income and Infants are contained in the intercept.
*** p<0.01, ** p<0.05, * p<0.1

Table 10: Subgroup Analysis: TANF v. Non-TANF OLS Regression results for impact of policies related to reporting change in income

	TANF Recipients			Non-TANF Recipients		
	Stable Spells (Share of children)	Unstable Spells (share of children)	Average Spell (months)	Stable Spells (Share of children)	Unstable Spells (share of children)	Average Spell (months)
Reporting Change in Income						
Report Some Changes	10.10% ***	-5.01% **	2.013 ***	-0.43%	-1.84%	-3.108 ***
	(0.021)	(0.019)	(0.694)	(0.023)	(0.013)	(0.793)
Report No Changes	10.10% ***	-0.61%	6.58 ***	9.47% ***	-7.53% **	2.384
	(0.029)	(0.021)	(2.292)	(0.028)	(0.033)	(1.531)
Other Policy	-0.31%	-0.27%	0.761	-1.09%	0.53%	-1.581
	(0.024)	(0.019)	(1.192)	(0.022)	(0.011)	(0.990)
Child Age						
24-35 months	0.0975 ***	-8.20% ***	2.237 ***	14.00% ***	-7.91% ***	2.831 ***
	(0.012)	(0.009)	(0.411)	(0.009)	(0.009)	(0.434)
36-47 months	11.40% ***	-8.53% ***	2.893 ***	17.00% ***	-8.67% ***	4.358 ***
	(0.017)	(0.010)	(0.588)	(0.016)	(0.010)	(0.852)
48-59 months	14.30% ***	-10.10% ***	4.505 ***	20.50% ***	-11.40% ***	6.438 ***
	(0.016)	(0.010)	(0.744)	(0.015)	(0.009)	(0.998)
60 months and older	18.50% ***	-11.80% ***	9.641 ***	28.20% ***	-14.20% ***	16.01 ***
	(0.017)	(0.010)	(2.282)	(0.011)	(0.008)	(1.659)
Household Income (monthly)	0.00% ***	0.00% ***	0.00149 ***	0.00% **	0.00% ***	0.000334
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Single-Parent Headed Household (Yes = 1)	6.85% ***	-2.62%	4.189 ***	12.90% ***	-7.51% ***	8.534 ***
	(0.026)	(0.017)	(1.305)	(0.014)	(0.009)	(1.734)
Household size	1.71% ***	-0.50%	2.038 **	3.36% ***	-1.74% ***	3.6 ***
	(0.005)	(0.003)	(0.996)	(0.004)	(0.002)	(0.815)
Intercept	-3.46%	57.60% ***	-7.631	-3.74%	58.00% ***	-13.08 **
	(0.061)	(0.042)	(6.647)	(0.039)	(0.029)	(6.416)
Observations	799,379	799,379	799,379	3,756,827	3,756,827	3,756,827
R-squared	0.445	0.242	0.567	0.49	0.324	0.603

State and year indicator variables are also included in the model. Robust standard errors (clustered at the state-level) are provided in parentheses. Recipients who have to report all changes in income and Infants are contained in the intercept.
*** p<0.01, ** p<0.05, * p<0.1

Table 11: OLS Regression results for the interaction of the three policies on maintenance of subsidy spells

	Total Population				TANF			Non-TANF		
	Share of eligible children with spells of more than 12 months	Share of children with spells of more than 12 months	Share of children with spells of less than 6 months	Average Spell (months)	Share of children with spells of more than 12 months	Share of children with spells of less than 6 months	Average Spell (months)	Share of children with spells of more than 12 months	Share of children with spells of less than 6 months	Average Spell (months)
Job Search (1= Job Search Allowed)	0.23% ***	-15.00% ***	8.33% ***	-2.951 ***	0.0145	0.0135	1.067	-22.80% ***	12.30% ***	-5.440 ***
	(0.000628)	(0.0176)	(0.00878)	(1.060)	(0.0199)	(0.0133)	(1.300)	(0.0164)	(0.00717)	(0.958)
Reporting Changes in Income (1= Do not report all changes in income)	1.17% ***	-5.81% **	2.93% **	-2.369	7.82% *	-7.26% ***	5.550	-14.10% ***	6.89% ***	-6.167 ***
	(0.00101)	(0.0271)	(0.0136)	(2.279)	(0.0412)	(0.0254)	(3.495)	(0.0237)	-0.0114	(1.972)
Redeterm. Period (1= 12-month redeterm. period)	0.36% ***	-7.15% **	3.57% *	1.195	8.19% **	-0.0246	7.673 ***	-14.20% ***	6.59% ***	-1.682
	(0.00104)	(0.0307)	(0.0182)	(1.854)	(0.0354)	(0.0270)	(2.348)	(0.0289)	(0.0159)	(1.844)
Interactions										
Job Search Allowed x Do not report all changes in income)	-0.53% ***	13.70% ***	-6.29% ***	4.919 ***	0.0211	7.55% ***	1.172	21.20% ***	-10.90% ***	7.505 ***
	(0.000443)	(0.0121)	(0.00613)	(0.902)	(0.0148)	(0.00951)	(1.135)	(0.0122)	(0.00615)	(1.043)
Job Search Allowed x 12-month redeterm. Period	-0.09%	10.40% ***	0.00803	-3.851 ***	-19.00% ***	14.70% ***	-10.520 ***	18.00% ***	-2.65% **	-1.379
	(0.00172)	(0.0278)	(0.0154)	(1.262)	(0.0368)	(0.0274)	(1.126)	(0.0241)	(0.0131)	(1.504)
Do not report all changes in income) x 12-month redeterm.	0.68% ***	36.00% ***	-18.50% ***	36.200 ***	38.20% ***	-17.40% ***	38.170 ***	36.10% ***	-17.50% ***	34.800 ***
	(0.00084)	(0.0235)	(0.0125)	(2.096)	(0.0409)	(0.0255)	(4.086)	(0.0214)	(0.0121)	(1.633)
Job Search Allowed x Do not report all changes in income) x 12-month redeterm. Period	0.44% ***	-12.00% ***	0.0164	0.773	19.50% ***	-29.80% ***	8.873 ***	-19.90% ***	7.16% ***	-1.852
	(0.00155)	(0.0238)	(0.0179)	(1.434)	(0.0339)	(0.0225)	(1.471)	(0.0229)	(0.0195)	(1.577)
Child Age										
24-35 months		13.10% ***	-8.31% ***	2.643 ***	9.59% ***	-8.16% ***	2.209 ***	14.30% ***	-8.35% ***	2.919 ***
		(0.00944)	(0.00673)	(0.428)	(0.0118)	(0.00893)	(0.429)	(0.00915)	(0.00789)	(0.479)
36-47 months		15.70% ***	-8.98% ***	3.868 ***	11.30% ***	-8.65% ***	2.863 ***	17.10% ***	-9.06% ***	4.328 ***
		(0.0175)	(0.00902)	(0.836)	(0.0180)	(0.0103)	(0.611)	(0.0181)	(0.0106)	(0.953)
48-59 months		19.10% ***	-11.50% ***	5.892 ***	14.30% ***	-10.10% ***	4.534 ***	20.50% ***	-11.80% ***	6.414 ***
		(0.0157)	(0.00753)	(0.988)	(0.0166)	(0.0102)	(0.783)	(0.0169)	(0.00855)	(1.110)
60 months and older		26.40% ***	-14.20% ***	15.090 ***	18.40% ***	-11.80% ***	9.730 ***	28.40% ***	-14.70% ***	16.410 ***
		(0.0135)	(0.00622)	(1.834)	(0.0181)	(0.0101)	(2.406)	(0.0124)	(0.0064)	(1.837)
Household Income (monthly)		0.00% ***	0.00% ***	0.001	0.00% ***	0.00% ***	0.001 ***	0.00% **	0.00% ***	0.000392
		(9.41e-06)	(6.06e-06)	(0.000582)	(8.62e-06)	(6.47e-06)	(0.000415)	(7.20e-06)	(3.77e-06)	(0.000589)
Single-Parent Households (Yes = 1)		12.60% ***	-7.43% ***	8.530 ***	7.20% ***	-2.94% *	4.445 ***	13.10% ***	-7.88% ***	9.068 ***
		(0.0138)	(0.00814)	(1.762)	(0.0261)	(0.0171)	(1.308)	(0.0150)	(0.00871)	(1.886)
TANF Recipient (yes = 1)		-12.40% ***	8.78% ***	-5.568 ***						
		(0.0346)	(0.0239)	(1.616)						
Household Size		2.79% ***	-1.37% ***	3.321 ***	1.74% ***	-0.00495	2.107 **	3.26% ***	-1.72% ***	3.739 ***
		(0.00422)	(0.00267)	(0.853)	(0.00505)	(0.00332)	(1.037)	(0.00383)	(0.00248)	(0.901)
Intercept	0.44% ***	15.40% ***	45.60% ***	-8.803	-5.11%	55.50% ***	-9.353	21.50% ***	43.10% ***	-7.917
	(0.00131)	(0.0501)	(0.0263)	(7.353)	(0.0731)	(0.0482)	(8.143)	(0.0456)	(0.0240)	(7.079)
Observations	1,559	4,114,794	4,114,794	4,114,794	758,969	758,969	758,969	3,355,825	3,355,825	3,355,825
R-squared	0.886	0.507	0.332	0.598	0.454	0.248	0.573	0.509	0.344	0.611

State and year indicator variables are also included in the model. Robust standard errors (clustered at the state-level) are provided in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Appendix A: Overview of dropped observations and missing data

The administrative dataset had minimal missing data. Below I have detailed the data points that were dropped because they were missing:

- Setting ID (56 observations)
- Child ID (21 observations)
- Report Date (month/year) (56 observations)
- Start of child care subsidy (month/year) (22 observations)
- Child date of birth (22 observations)
- Weights (1 observation)
- Single Parent Households (172 observations)
- TANF recipients (2,449 observations)

An additional 44,783 observations were duplicative and were dropped.

Territories were also dropped from the data set:

- American Samoa (25,220)
- Guam (30,392)
- Northern Mariana Islands (15,703)
- Puerto Rico (18,005)
- Virgin Islands (26,154)

Finally, the following outliers were dropped from the data:

- Dropped observations with family size larger than 12 (2,210 observations). I expect that families with more than 12 individuals may have different child care needs and may bias my data
- Dropped observations where the child was 13 years or older. Under federal regulation, states can provide subsidies to children younger than 13 years of age (unless they have special needs). (2,471 observations)

Appendix B: Start Date of Policies by State

State	Job Search	Redetermination	Reporting Income
Illinois	2004/04/23	2005/10/01	2001/01/01
Nebraska	2007/08/20	2007/08/20	2002/06/17
New Jersey	2003/12/01	2003/12/01	2003/12/01
Rhode Island	2007/09/01	2004/01/01	2004/01/01
Alabama	2007/06/20	2007/06/20	2004/02/01
Montana	2006/09/01	2006/09/01	2005/05/01
Pennsylvania	2006/11/07	2005/07/01	2005/07/01
Utah	2007/07/01	2006/08/01	2006/08/01
Louisiana	2008/04/01	2008/09/01	2006/09/01
New Hampshire	2006/10/01	2006/10/01	2006/10/01
Virginia	2006/10/01	2006/10/01	2006/10/01
Kansas	2007/01/01	2007/01/01	2007/01/01
Indiana	2007/01/14	2007/01/14	2007/01/14
Texas	2008/09/01	2007/01/29	2007/01/29
Minnesota	2007/09/01	2007/04/01	2007/04/01
Michigan	2007/10/01	2007/10/01	2007/04/01
South Dakota	2007/10/01	2007/10/01	2007/04/01
Colorado	2007/05/01	2007/05/01	2007/05/01
Delaware	2007/06/01	2007/06/01	2007/06/01
Arizona	2007/07/01	2007/07/01	2007/07/01
Arkansas	2007/07/01	2007/07/01	2007/07/01
California	2007/07/01	2007/07/01	2007/07/01
Tennessee	2007/07/01	2007/07/01	2007/07/01
Washington	2007/04/10	2008/01/10	2007/07/01
New Mexico	2007/07/16	2007/07/16	2007/07/16
Connecticut	2007/07/18	2007/07/18	2007/07/18
Iowa	2008/08/08	2008/08/08	2007/08/28
Missouri	2007/09/01	2007/09/01	2007/09/01
North Carolina	2007/09/01	2007/09/01	2007/09/01
Florida	2007/03/04	2007/04/18	2007/10/01
Alaska	2007/10/01	2007/10/01	2007/10/01
Maryland	2007/10/01	2007/10/01	2007/10/01
Mississippi	2007/10/01	2007/10/01	2007/10/01
Oregon	2007/10/01	2007/10/01	2007/10/01
Nevada	2007/08/01	2007/08/01	2007/11/01
Georgia	2007/11/01	2007/11/01	2007/11/01
Massachusetts	2007/12/03	2007/07/18	2007/12/03
Ohio	2008/07/01	2008/02/01	2008/02/01
North Dakota	2007/09/28	2007/06/01	2008/03/01
Hawaii	2008/03/08	2008/03/08	2008/03/08
Idaho	2008/05/01	2008/05/01	2008/05/01
Kentucky	2008/05/01	2008/05/01	2008/05/01
Oklahoma	2008/06/01	2008/06/01	2008/06/01
West Virginia	2008/07/01	2008/07/01	2008/07/01
New York	2008/09/01	2004/03/04	2008/09/01
Wisconsin	2008/10/29	2008/10/29	2008/10/29
Wyoming	2009/10/01	2009/01/01	2009/01/01
Vermont	2009/02/09	2009/02/09	2009/02/09
South Carolina	2009/08/01	2009/08/01	2009/08/01
DC	2007/03/01	2009/09/01	2009/09/01
Maine	2009/10/01	2009/10/01	2009/10/01

Appendix C: States' CCDF policies

Length of Redetermination Period (in months)

States whose policies change over time			
State	*BeginDat*	*EndDat*	*RedetermPeriod*
Colorado	2007/05/01	2008/07/31	6
	2011/09/01	Present	12
Conneticut	2007/07/18	2010/12/31	6
	2011/01/01	Present	8
Delaware	2007/06/01	2010/06/09	6
	2010/06/10	Present	12
Georgia	2007/11/01	2009/03/31	6
	2009/04/01	Present	12
Oklahoma	2008/06/01	2011/05/08	12
	2011/05/09	Present	6
New Mexico	2007/07/16	2010/06/29	6
	2010/06/30	Present	12
Oregon	2007/10/01	2009/03/31	Other
	2009/04/01	Present	6

States whose policies don't change over time		
6 months Redetermination Period	*12 months Redetermination Period*	*Other Policy*
1. Alabama	1. California	1. Texas
2. Alaska	2. District of Columbia	
3. Arizona	3. Florida	
4. Arkansas	4. Kansas	
5. Hawaii	5. Kentucky	
6. Idaho	6. Louisiana	
7. Illinois	7. Maine	
8. Indiana	8. Maryland	
9. Iowa	9. Massachusetts	
10. Minnesota	10. Michigan	
11. Mississippi	11. Missouri	
12. Montana	12. Nebraska	
13. Nevada	13. New Jersey	
14. New Hampshire	14. New York	
15. North Dakota	15. North Carolina	
16. Pennsylvania	16. Ohio	
17. Rhode Island	17. South Carolina	
18. South Dakota	18. Vermont	
19. Tennessee	19. Virginia	
20. Utah		
21. Washington		
22. West Virginia		
23. Wisconsin		
24. Wyoming		

Job Search Eligibility: *If job search activities are approved for CCDF eligibility*

States whose policies change over time 1=Yes, for initial and continuing eligibility; 2=Yes, only for continuing eligibility; 3=No			
State	*BeginDat*	*EndDat*	*EligApproveActivityJobSearch*
Kentucky	2008/05/01	2011/03/31	2
	2011/04/01	9999/12/31	1
Louisiana	2008/04/01	2009/01/31	1
	2010/01/01	2010/11/30	3
Mississippi	2007/10/01	2010/09/30	2
	2010/10/01	2012/01/31	1
Missouri	2007/09/01	2010/04/27	2
	2010/04/28	2012/03/14	1
New Mexico	2007/07/16	2009/09/30	1
	2009/10/01	2010/06/29	2
	2010/06/30	9999/12/31	1
New York City	2008/09/01	2009/06/01	1
	2009/06/02	2009/07/26	3
	2009/07/27	2011/04/30	2
	2011/05/01	9999/12/31	3
Wyoming	2009/10/01	2010/06/30	1
	2010/07/01	2012/06/30	3

States whose policies don't change over time		
Yes, for initial and continuing eligibility	**Yes, only for continuing eligibility**	**No**
2. Alaska	1. Arizona	1. Alabama
3. California	2. Connecticut	2. Arkansas
4. Colorado	3. Florida	3. Idaho
5. Delaware	4. Georgia	4. Kansas
6. District of Columbia	5. Illinois	5. Michigan
7. Hawaii	6. Indiana	6. New Jersey
8. Iowa	7. Maine	7. Ohio
9. Maryland	8. Montana	8. South Carolina
10. Massachusetts	9. Oklahoma	9. Tennessee
11. Minnesota	10. Oregon	10. Utah
12. Nebraska	11. Pennsylvania	11. Virginia
13. Nevada	12. Rhode Island	12. Wisconsin
14. New Hampshire	13. South Dakota	
15. New York	14. Texas	
16. North Carolina	15. Washington	
17. North Dakota	16. West Virginia	
18. Vermont		

Reporting Change in Income: *If changes in income have to be reported*

States whose policies change over time 1=Yes, all changes in income; 2=Yes, only a certain amount; 3=No; 99=Other (detailed in notes)				
State	*BeginDat*	*EndDat*	*ReportIncome*	*Notes*
Colorado	2007/05/01	2011/08/31	1	
	2011/09/01	Present	99	Participants must report and verify changes in income that exceed 85 percent of the state median income within 10 calendar days of the change.
Delaware	2007/06/01	2010/09/30	1	
	2010/10/01	Present	2	
Massachusetts	2007/12/03	2009/12/22	1	
	2009/12/23	Present	99	A significant change, defined as a 20 percent increase or decrease in total household income, must be reported.
New Mexico	2007/07/16	2010/06/29	1	
	2010/06/30	Present	3	
North Dakota	2008/03/01	2011/09/30	1	
	2011/10/01	Present	3	
Oregon	2007/10/01	2008/12/31	99	Only changes in source of income and/or rate of pay must be reported.
	2009/01/01	Present	1	
Virginia	2006/10/01	2009/02/28	1	
	2009/03/01	Present	99	Changes to the family's gross monthly income causing the total amount to exceed the income eligibility threshold must be reported. Also, if a family no longer has income, it must be reported.
Washington	2007/07/01	2011/01/13	1	
	2011/01/14	Present	99	Changes in income must be reported only if the change would cause countable income to exceed the maximum eligibility limit.
Wisconsin	2008/10/29	2009/10/13	2	
	2009/10/14	Present	99	Changes must be reported if monthly income increases by at least 250 dollars, decreases by 100 dollars or more, or if the increase in income will raise gross income above 200 percent of the federal poverty level.

States whose policies don't change over time			
Yes, all changes	**Yes, only changes over a certain amount**	**No**	**Other**
1. Alabama 2. Arizona 3. Arkansas 4. California 5. Connecticut 6. District of Columbia 7. Florida 8. Georgia 9. Idaho 10. Illinois 11. Iowa 12. Kentucky 13. Maine 14. Maryland 15. Minnesota 16. Mississippi 17. Missouri 18. Montana 19. Nebraska 20. Nevada 21. New Hampshire 22. New Jersey 23. New York 24. North Carolina 25. Ohio 26. Oklahoma 27. South Carolina 28. South Dakota 29. Tennessee 30. Texas 31. Vermont 32. Wyoming	1. Alaska 2. Kansas 3. Louisiana 4. Michigan 5. Rhode Island	1. Indiana 2. Pennsylvania 3. West Virginia	1. Hawaii 2. Utah